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Dennis McLerran, Regional Administrator
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February 03, 2014

Dear Administrator McCarthy:

As scientists with backgrounds in ecology and natural resource-related disciplines, we are writing to express our appreciation of the Environmental Protection Agency for completing *An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska* (Watershed Assessment), released on January 15, 2014. Based on the results of the assessment, we are very concerned about the prospect of large-scale mining in the unique and biologically rich watersheds of southwest Alaska's Bristol Bay.

EPA has taken every precaution to ensure that this assessment represents the most comprehensive available science regarding large-scale mining in salmon watersheds. The report draws on hundreds of peer-reviewed published reports and scientific findings. Furthermore, it draws directly on documents prepared for and by Northern Dynasty Minerals (NDM), the company seeking to develop the Pebble deposit—one of over a dozen of mining claims in the headwaters of the Nushagak and Kvichak drainages. During two rounds of peer review, national experts weighed in, improving the scope, structure, and content of the Assessment in a manner that well exceeds the requirements of traditional peer review processes.

In our view, the final Watershed Assessment aptly identifies the outstanding ecological and cultural values at risk from a mine on the scale of the Pebble discovery or from other mine operations that would likely follow. The Bristol Bay area, especially the Nushagak and Kvichak river watersheds, the headwaters of three other pristine rivers, and the largest undeveloped lake on Earth, is one of the most productive landscapes on the continent. Undeveloped watersheds are a rarity throughout the world and Bristol Bay's watersheds support a world-class salmon fishery, which includes all five salmon species native to Alaska and the largest sockeye salmon runs in the world. Annual salmon returns, fully unsupported by hatcheries, typically average in the tens of millions. The Bristol Bay Sport Management Area also supports bountiful sport and subsistence fisheries. Together, this keystone fishery and the diverse habitats of the region are home to abundant populations of brown bears, gray wolves, and bald eagles. Caribou and moose frequent the area's wetlands.

The Watershed Assessment underscores that it is imperative to protect healthy and diverse fish populations central to the wellbeing of the region's Alaska Native subsistence-based cultures. In addition, the Bristol Bay fishery generates nearly 50% of the global commercial sockeye salmon catch and therefore supports an economy valued at over \$480 million each year, supporting over 14,000 jobs in the commercial and sport fisheries.

In our view, EPA's Watershed Assessment identifies not only the important ecological, economic, and cultural values tied to Bristol Bay, but also highlights the risks mining poses to them. Those include, but are not limited to¹:

- Based on three mine scenarios (0.25 billion tons, 2 billion tons, and 6.5 billion tons), Pebble could cause the direct loss of up to 24, 56, and 94 miles of streams respectively and alter stream flow up to an additional 33 miles;
- Mining/scenarios assessed would result in the direct loss of up to 5,350 acres of wetlands and ponds;
- Mining at the headwaters of the Kvichak and Nushagak drainages would increase acidity and metals concentrations in area waters, which could degrade important salmon habitat;
- Leaching of copper during standard operation could directly impact salmonids in up to 35 miles of river and stream beyond the mine footprint;
- Leaching during standard operation could indirectly impact salmonids in up to 51 miles of stream within the mine footprint; and
- Failure of a tailings storage facility dam that released only a partial volume of the stored tailings would result in catastrophic effects on fishery resources.

Further, EPA recognizes that no examples of successful, long-term collection and treatment systems exist for waste materials generated at large-scale mining sites. The need to manage and permanently contain a volume of mine tailings even close to these numbers in a harsh yet vulnerable environment would be an enormous challenge. This is particularly important given the sensitivity of aquatic life to very low levels of metals and the potential for effects that could result in a long-term decline of fish populations.

Again, we applaud EPA for its effort to establish a solid, science-based assessment from which to evaluate likely impacts to Bristol Bay from large-scale mine development. The preponderance of evidence presented in the Watershed Assessment indicates that large-scale hard rock mining in the Bristol Bay watershed threatens a world-class fishery and uniquely rich ecosystem, and we urge the Administration to act quickly to protect the area. Therefore, we urge EPA to use its authority under the Clean Water Act to take the necessary next steps to protect Bristol Bay.

Sincerely, (*Affiliations are provided for identification purposes only.)

¹ United States Environmental Protection Agency, *An Assessment of Potential Impacts of Salmon Ecosystems of Bristol Bay Alaska*, EPA 910-R-14-001ES (Seattle, WA, January 2014).

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